SAFE ROOM FAQ

Frequently Asked Questions

SHOULD I HAVE A SAFE ROOM?

Chapter 2 of FEMA P-320 provides information to help homeowners determine whether their home needs a safe room. Homeowners should ask themselves several questions when considering whether to install a safe room:

- What is my risk of tornadoes?
- What existing refuge options do I have if a tornado occurs in my location?
- What level of safety am I comfortable with?
- How feasible is it to construct a safe room and what are the costs?

MY HOUSE HAS A BASEMENT. DO I NEED A SAFE ROOM?

Some strong tornadoes have resulted in loss of floor framing, collapse of basement walls and death and injuries to individuals taking refuge in a basement. The acceptable level of protection is an individual decision. A basement may be the safest place to seek shelter in a home without a safe room, but the basement will not provide the same level of protection as a safe room unless it has been designed and constructed in accordance with the criteria in FEMA P-361.

A basement is a good location to install or build a safe room, but access for handicapped or physically challenged individuals may be limited. The flood risk of your location may also help determine whether your basement is an appropriate place for a safe room. If your house or neighborhood is prone to flooding, the basement may not be suitable for taking refuge.

DOES IDHS APPROVE, ENDORSE, OR CERTIFY ANY PRODUCTS?

Due to federal regulations, IDHS does not endorse, approve, certify, or recommend any contractors, individuals, firms, or products.

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WHAT IS THE MINIMUM SQUARE FOOTAGE PER PERSON FOR A RESIDENTIAL TORNADO AND HURRICANE SAFE ROOM?

RESIDENTIAL SAFE ROOM TYPE	MINIMUM USABLE FLOOR AREA* PER SAFE ROOM OCCUPANT
One- and Two-Family Dwelling	3 square feet
Other Residential	5 square feet

* See FEMA P-361 for more information on usable safe room floor area.

WHAT IS THE COST OF INSTALLING A SAFE ROOM IN A NEW HOME?

Costs for construction vary across the United States. In general, safe rooms installed in existing homes are more expensive than those installed during new construction. The cost of a safe room depends on a variety of factors, including:

- Size
- Materials used (CMU, concrete, wood, insulated concrete form [ICF], combination)
- Location (if internal, within building; if external, above or below ground)
- Whether the safe room is prefabricated or site-built
- Number of exterior home walls used in constructing the safe room
- Type of door used
- Type of foundation on which the home is built
- Location within the United States (because of regional variations in labor and material costs)
- Whether the safe room is built as part of a new home or retrofitted into an existing home
- Any added amenities (e.g., bathroom fixtures)

Designers of safe rooms must be registered design professionals, such as an architect or engineer, who is familiar with safe rooms and are certified in the state where the work is being performed.

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CAN I INSTALL A SAFE ROOM IN AN EXISTING HOME?

Yes, a safe room may be installed during the initial construction of a home or retrofitted afterward. When installing a safe room in an existing home, the adequacy of the foundation is a primary concern. A vast majority of slab-on-grade foundations in homes are not adequate to transfer the loads from a safe room to the ground, even if they have some level of reinforcement. When constructing or installing a safe room onto an existing slab, the slab should be inspected to determine whether it is sufficient to support the safe room. An architect or engineer should be consulted to ensure that any existing elements of the home (including the foundation) that are used as part of the safe room can provide sufficient protection.

ICC 500 also requires any storm shelter installed on an existing slab using post-installed anchors (i.e., anchors installed in concrete that has already hardened) to be subject to special inspections. This requirement also applies to safe rooms. Helpful information on safe room foundations and anchoring can also be found in the Foundation and Anchoring Criteria for Safe Rooms Fact Sheet on FEMA's website.

WHERE SHOULD THE SAFE ROOM BE INSTALLED?

There are several possible locations in or near your home or small business for a safe room. It can be either inside (within the building footprint) or outside (detached or adjacent to the existing building) and above-ground, in-ground, or in a basement. Many people prefer to build within their homes or buildings so they have some level of protection while attempting to access their safe room. For an existing home or small business, this convenience must be balanced with the challenges of retrofitting the building. When determining where to locate a safe room, the building owner must determine what is best for his or her situation. For example, while an interior safe room offers the benefit of being closer to the building occupants, an exterior safe room may be easier to install for an existing building.

For more information on selecting the location of a safe room within your home or small business, see FEMA P-320, Section 3.5.

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IS AN IN-GROUND SAFE ROOM SAFER THAN ONE ABOVE GROUND?

In-ground safe rooms provide inherent protection from windborne debris naturally afforded by the surrounding soil coverage. Above-ground safe rooms are required to be rigorously tested to ensure that they can also provide protection from windborne debris. Therefore, all properly constructed safe rooms offer life-safety protection if they are properly designed and constructed.

ARE THERE ANY FLOOD HAZARD RESTRICTIONS FOR THE LOCATION OF A RESIDENTIAL SAFE ROOM?

Yes. FEMA provides guidance on the location of residential safe rooms in relation to flood hazards. Per FEMA P-361, flood hazards should be considered when designing a residential safe room. More information on siting restrictions and additional elevation requirements can be found in the *Flood Hazard Elevation and Siting Criteria for Residential Safe Rooms* Quick Guide and FEMA P-361.

BESIDES FEMA GUIDANCE, WHAT OTHER CODES AND STANDARDS APPLY TO SAFE ROOMS?

FEMA P-361 provides the design criteria to be used with common building codes and standards to design a building. In December 2014, the International Code Council® (ICC®), with the support of the National Storm Shelter Association® (NSSA®), released a second edition of the consensus standard titled Standard for the Design and Construction of Storm Shelters, also known as the ICC 500. A summary of ICC 500 requirements and changes made to the 2014 edition compared to the 2008 edition can be found in Highlights of ICC 500-2014.

WHERE CAN I FIND ADDITIONAL INFORMATION AND PLANS FOR SAFE ROOM CONSTRUCTION?

Additional information is available at the FEMA Safe Room Web site.

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CAN I CHANGE THE PRESCRIPTIVE PLANS IN FEMA P-320 TO MEET MY SPECIFIC NEEDS?

A safe room can be sized differently as long as it complies with the guidance in FEMA P-361. When changing any details of the prescriptive plans in FEMA P-320, consult a licensed design professional to verify that the modified plans still meet or exceed the design criteria of FEMA P-361.

WHAT SHOULD I DO IF I AM UNSURE A SAFE ROOM OR STORM SHELTER PRODUCT MEETS CRITERIA?

If you are unsure if a safe room or storm shelter product meets FEMA P-361 criteria, you may contact your local building official or local or state emergency management office.

ARE INSPECTIONS REQUIRED?

Obtaining proper building permits and inspections is important for all construction. The builder or homeowner should ensure the safe room is built according to the plans in FEMA P-320 or to plans that, through testing and engineering, have been determined to meet the safe room design criteria in FEMA P-361. The level of construction needed for a safe room typically requires a permit from the local building department. Further, to verify compliance with the FEMA or ICC 500 criteria, additional quality control inspections may be needed.

ICC 500 does have provisions for special inspections. ICC 500 requires that anchors post-installed in hardened concrete (e.g., an existing slab) for safe rooms be subject to special inspections to verify the anchor installation, capacity, and foundation adequacy meet the manufacturer's requirements.

WHO SHOULD I CONTACT TO INSPECT MY SAFE ROOM?

A design professional licensed in the state in which the safe room is installed can be contracted to inspect your safe room. Contact a local building official to determine who can properly inspect your safe room to verify that the safe room design criteria in FEMA P-361 have been met.

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WHAT FORCES SHOULD A RESIDENTIAL SAFE ROOM DOOR BE DESIGNED TO RESIST?

Residential safe room doors must be designed to resist a minimum wind speed of 250mph and be tested to resist the corresponding missile impacts and wind pressures. This means the doors must be subjected to 15-pound, 2-inch x 4-inch wood boards traveling at 100mph. Helpful information on safe room doors can also be found in the Residential Tornado Safe Room Doors Fact Sheet on FEMA's website.

SHOULD THE DOOR OF A SAFE ROOM SWING INWARD OR OUTWARD?

A common misconception about safe room doors is that they must swing in a particular direction – inward or outward. According to ICC 500, the pressure testing on a door must be conducted away from the door stop, meaning that the door is pressure-tested in the weakest condition regardless of being in-swinging or out-swinging. Additionally, a door must undergo the missile impact resistance testing in the configuration that will be used for installation.

Beyond code requirements, both inward- and outward-swinging doors have benefits. For example, inward-swinging doors are less likely to be blocked by debris, while outward-swinging doors provide more space within the safe room.

In some states or communities, the applicable building code may require that doors swing in a particular direction. For information on code requirements for your jurisdiction, contact a local building official or licensed design professional in your area.

HOW SHOULD I PREPARE FOR THE POSSIBILITY OF A SAFE ROOM DOOR BECOMING BLOCKED BY DEBRIS AFTER A TORNADO EVENT?

An emergency supply kit should be kept within the safe room. Section 4.4 in FEMA P-320 provides guidance on the emergency supply kit including a checklist of suggested items. The kit can include tools to open damaged doors such as a crowbar, jack or spreader.